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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,178	04/27/2001	Zhonghua Lu	56373USA9A.002	2557

32692 7590 09/10/2003

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EXAMINER

WILLS, MONIQUE M

ART UNIT PAPER NUMBER

1746

DATE MAILED: 09/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/845,178

Applicant(s)

LU ET AL.

Examiner

Wills M Monique

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 April 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/27/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Information Disclosure Statement*

The information disclosure statement(s) filed August 31, 2001, August 17, 2002 and September 3, 2002 has/have been received and complies with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 .

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2 & 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Nitta et al U.S. Patent 5,393,622.

Nitta teaches a non-aqueous lithium secondary battery comprising an anode, cathode and electrolyte (col. 1, lines 5-20). The cathode composition has the formula  $\text{Li}_y\text{Ni}_{1-x}\text{Mn}_x\text{O}_2$  where  $0 \leq x \leq 0.3$  and  $1.0 \leq y \leq 1.3$  (col. 3, lines 50-55).  $\text{M}^1 = \text{Ni}$  and the cathodic composition inherently has an o3 crystal structure that does not undergo a phase transformation to a spinel crystal structure when incorporated in a lithium-ion battery and cycled for 100 full charge-discharge cycles at 30°C and a final capacity of 1340 mAh/g using a discharge current of 30mA/g. Therefore, the instant claims are anticipated by Nitta.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7 & 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Yanai et al. U.S. Patent 6,368,749.

Yanai teaches a non-aqueous lithium secondary battery comprising an anode, cathode and electrolyte (col. 3, lines 35-50). The cathode composition has the formula  $\text{LiNi}_a\text{Co}_b\text{M}_c\text{O}_2$  where  $a+b+c=1$  and  $0 \leq c \leq 0.5$  and M may be Mn as exemplified by Table 2 cells B3, B4 and  $y^2$  and  $y^4$  (col. 3, lines 50-55).  $M^1 = \text{LiNi}_a\text{Co}_b$  and  $M^2 = \text{Ni}_a$  and the cathodic composition inherently has an O3 crystal structure that does not undergo a phase transformation to a spinel crystal structure when incorporated in a lithium-ion battery and cycled for 100 full charge-discharge cycles at 30°C and a final capacity of 1340 mAh/g using a discharge current of 30mA/g. Therefore, the instant claims are anticipated by Yanai.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,2 & 8-12 & 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Paulsen et al. U.S. Pub. 2003/0022063.

Paulsen teaches a non-aqueous lithium secondary battery comprising an anode, cathode and electrolyte (par. 41). The cathode composition has the formula  $\text{Li}[\text{Li}_x\text{Co}_y\text{A}_{1-x-y}]\text{O}_2$  where  $\text{A}=[\text{Mn}_z\text{Ni}_{1-z}]$  where  $0.4 \leq z \leq 0.65$ ,  $0 < x < 0.16$  and  $0.1 \leq y \leq 0.3$  (par. 35).  $\text{M}^1 = \text{Li}[\text{Li}_x\text{Co}_y\text{Ni}_{1-z}]$  and  $\text{M}^3 = \text{Co}_y$  and the cathodic composition inherently has an O3 crystal structure that does not undergo a phase transformation to a spinel crystal structure when incorporated in a lithium-ion battery and cycled for 100 full charge-discharge cycles at 30°C and a final capacity of 1340 mAh/g using a discharge current of 30mA/g. Therefore, the instant claims are anticipated by Paulsen.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,2 & 13-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Sunagawa et al. U.S. Patent 6,333,128.

Sunagawa teaches a non-aqueous lithium secondary battery comprising an anode, cathode and electrolyte (col. 5, lines 40-55). The cathode composition has the  $\text{Li}_a\text{Co}_b\text{M}_c\text{Ni}_{1-b-c}\text{O}_2$  where  $0 \leq a \leq 1.2$ ,  $0.01 \leq b \leq 0.4$ ,  $0.01 \leq c \leq 0.4$  and M is exemplified as manganese in Table 1.  $\text{M}^4 = \text{Ni}_{1-b-c}$  and  $\text{M}^5 = \text{Co}_b$  and the cathodic composition inherently has an O3 crystal structure that does not undergo a phase transformation to a spinel crystal structure when incorporated in a lithium-ion battery and cycled for 100 fuel charge-discharge cycles at 30°C and a final capacity of 1340 mAh/g using a discharge current of 30mA/g. Therefore, the instant claims are anticipated by Sunagawa.

### ***Conclusions***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takada et al. U.S. Patent 6,270,925 teaches a lithium battery comprising a lithium iron oxide. Munakata et al. U.S. Pub. 2002/0012843 teaches a positive electrode material comprising a lithium-containing manganese composite oxide. Nishida et al. U.S. Patent 6,521,379 teaches a non-aqueous electrolyte secondary cell with a lithium cobalt oxide positive electrode. Dahn et al. U.S. Patent 6,168,887 teaches a layered lithium manganese oxide bronze and electrodes. Kweon et al. U.S. Patent 6,372,385 teaches an active material for a positive electrode comprising a lithium complex oxide.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (703) 305-0073. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

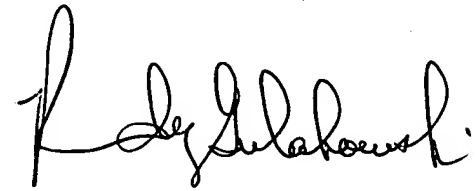
If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Randy Gulakowski, may be reached at 703-308-4333.

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The unofficial fax number is (703) 305-3599. The Official fax number for non-final amendments is 703-872-9310. The Official fax number for after final amendments is 703-872-9311.

Mw

08/28/03

A handwritten signature in black ink, appearing to read "Randy Gulakowski". The signature is fluid and cursive, with the first name "Randy" and last name "Gulakowski" clearly distinguishable.

RANDY GULAKOWSKI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700